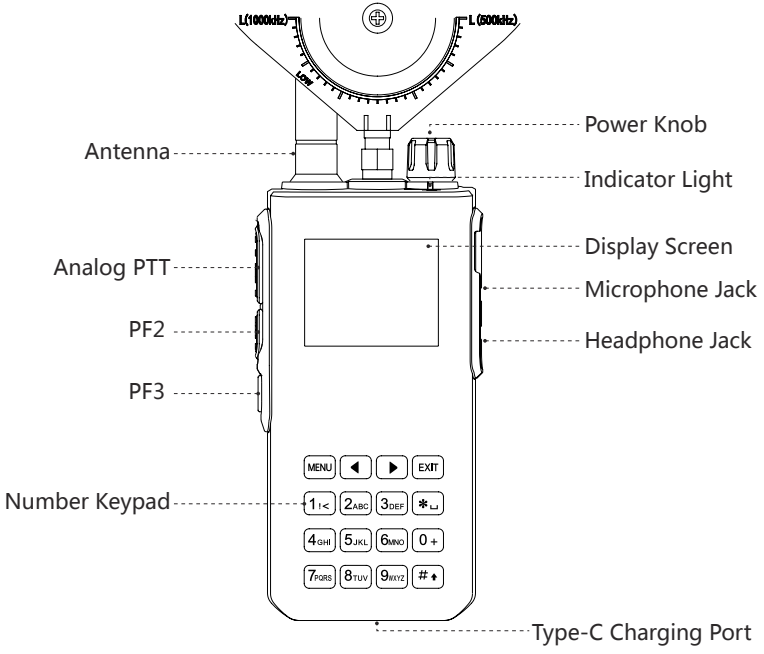
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# Handheld
# Shortwave Radio

## USER'S MANUAL

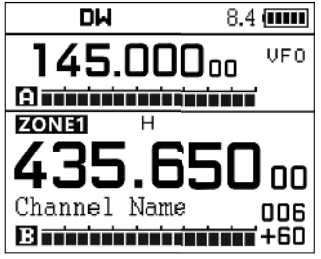
## Getting to Know the Device




## Shortcut Keys combination

| | | |
|---|---|---|
| Long press mumber 1 | SCAN | Enter scanning function |
| Long press mumber 2 | Memory Channel | Store frequency into channel |
| Long press mumber 3 | Frequency step | Set frequency step |
| Long press mumber 4 | Power Select | Select High, Middle, Low powel |
| Long press mumber 5 | Squelch | Adjust squelch levels |
| Long press mumber 6 | Dual Standby | Turn on/off dual standby |
| Long press mumber 7 | CTCSS | Set CTCSS sub tone |
| Long press mumber 8 | Shift Direction | Set repeater shift direction |
| Long press mumber 9 | Offset | Set repeater offset frequency |
| Long press mumber 0 | FM Radio | Turn on FM Radio broadcast |
| Long press mumber # | Keypad lock | Lock/Unlock keypad |
| short press mumber # | DTMF | DTMF tone edit |
| short press mumber * | R/T | Switch R/T |

## LCD display




Dual-band Interface

## Icon Description

| Icon | Description |
|---|---|
| CT | Analog Sub-audio Tone Indicator.This symbol indicates that the current sub-audio tone is an analog tone. When this symbol appears during transmission, it signifies that an analog sub-audio signal is being transmitted. |
| DCS | Digital Sub-audio Tone Indicator. This symbol indicates that the current sub-audio tone is a digital tone. When this symbol appears during transmission, it signifies that a digital sub-audio signal is being transmitted. |
| H | High Power Indicator. This symbol indicates that the current transmission power is set to high. |
| M | Medium Power Indicator. This symbol indicates that the current transmission power is set to medium. |
| L | Low Power Indicator. This symbol indicates that the current transmission power is set to low. |
| N | Narrowband Mode Indicator. This symbol appears when the channel is operating in narrowband mode. |
| W | Wideband Mode Indicator. This symbol appears when the channel is operating in wideband mode. |
| + | Frequency Mode (+ Frequency Offset) This symbol appears in frequency mode, indicating that the transmission frequency is the reception frequency plus a frequency offset. |
| – | Frequency Mode (- Frequency Offset) This symbol appears in frequency mode, indicating that the transmission frequency is the reception frequency minus a frequency offset. |
| R | Frequency/Channel Mode Inverted Frequency. This symbol appears when the reception and transmission frequencies are inverted in frequency or channel mode. |
| T | Simplex Mode. In simplex mode, the reception and transmission frequencies are adjusted to be the same. |
| SC | SC (Encryption) Indicator. The appearance of “SC” indicates that the encryption function is enabled. |

## Icon Description

| Icon | Description |
|---|---|
| AM | AM Modulation Indicator: Displays this symbol to indicate that the current frequency is in AM modulation mode |
| SCR | Scrambler Function: Indicates that the scrambler function is active. |
| VOX | VOX (Voice-Operated Transmission): Indicates that the VOX function is enabled. Transmission starts when the microphone's sound pressure level reaches the set threshold. |
| DW | Dual Standby: Indicates that the dual-band standby function is set and active, allowing simultaneous monitoring of the two frequency points displayed on the screen. |
| MO | Monitor Function Enabled: Indicates that the monitor function is enabled. |
| ♪ | Side Tone Enabled: Indicates that the side tone function is active, producing a tone sound when transmitting DTMF. |
| 🔒 | Keypad Lock: Appears when the keypad is locked. Long press the # key to unlock. |
| RSSI | Signal Strength: Indicates the strength of the received signal. |
| A B | A/B Band: Indicates whether the A band or B band is active. |
| VOL | Transmit Audio Volume: Indicates the volume level of the transmitted audio. |
|  | Battery Status: Displays the remaining battery power. When the battery is nearly depleted, the outer frame of this symbol flashes, and transmission is prohibited. When the outer frame is green, the device is in super power-saving mode. |

# Basic Operations

**Main Frequency Band Selection**
**Standby Screen**: Short press the【A/B】key or Long press the【EXIT】key to select the main frequency. The larger display indicates the currently active main frequency band.

**PTT Function**
When operating on the A band, press the PTT key to transmit on the A band frequency. When operating on the B band, press the PTT key to transmit on the B band frequency.

**Channel Mode and Frequency Mode Switch**
Short press the【VFO/MR】key or Long press the【OK】key button to switch channel mode and frequency mode.

**AM Air Band Mode**
Short press the【VFO/MR】key or Long press the【OK】key to switch to frequency mode. Directly input the air band frequency within the range of 108 MHz to 136 MHz. The radio will automatically enter AM reception mode, and the channel status will display AM. This mode is primarily used to receive AM modulated signals.

**Scanning Mode**
Assign the scanning function to the side keys PF2/PF3. Or long press button 1 to start frequency or channel scanning. You can choose one of the following modes from Menu 23:
**1. Time Operation Mode (TO)**When the walkie-talkie detects a signal, it stops scanning and stays at the same frequency. After 5 seconds, it will resume scanning, even if the signal is still present.
**2.Carrier Operation Mode (CO)**
The walkie-talkie stops scanning and remains at the same frequency when it detects a signal, until the signal disappears. There is a 2-second delay before scanning resumes after the signal is lost.
**3.Search Operation Mode (SE)**
Upon detecting a signal, the walkie-talkie exits the scan and stays on this frequency.

**Commercial FM Radio Broadcast Reception Functions (Long Press Button 0)**
1.Long press the button 0 to turn on the FM RADIO; the screen will display the current frequency.
2.Use the UP/DOWN keys or the channel knob to adjust the frequency. You can also input a  frequency directly via he keypad.

# Basic Operations

**Frequency Sweep Function / Copy Frequency**
(Define PF2/PF3 buttons as SEARCH from Menu 24-26)
This function is used to seek the frequencies and sub-tones of nearby radios for immediate communication.
After defining the side keys (PF buttons) as SEARCH, press the button until the LCD displays "SEARCH/SEEK…". Press the OK button to select the frequency band from UHF/VHF/200M/300M. After capturing a frequency, it will continue to seek sub-tone CTCSS/DCS. If no sub-tone is found, the LCD will display "NONE." At this point, you can press the【**MENU**】key to save the frequency to a specified channel, or press the UP or DOWN key to start the next frequency scan.

**Weather Forecast NOAA Function**
(Define PF button as NOAA from Menu 24-26)
Press the designated side key to activate this function. The radio has 10 built-in fixed frequencies.
You can press the UP/DOWN keys to select the frequency you want to listen to.
Note: The NOAA weather forecast function is available only in countries and regions that support the NOAA channels.

**DTMF Encode Sending**
**Fast Operation:** Press and hold the PTT button while entering the number keys 0-9, MENU, UP, DOWN, EXIT, *, and #. The radio will transmit DTMF codes 0-9, A, B, C, D, *, and #. Release the button to stop sending codes.
**Editing DTMF Code:** In standby mode, short press the【**#**】button to enter the DTMF code editing interface. You can enter codes 0-9, OK, UP, DOWN, Exit, *, and # via the keypad. Press PTT to send the DTMF code.

**PTT-ID Function**
Transmit identity codes or call codes via DTMF. There are 15 sets of call codes, configurable through "Programming Software → Edit → DTMF". Each signal or A/B band can independently select the call code group to be sent.
Configure identity code parameters via "Programming Software → Edit → DTMF → Local ID Code". There are three transmission methods:
**Send on Press:** After pressing the PTT, the call code/identity code is sent first, followed by the voice signal.
**Send on Release:** After releasing the PTT, the call code/identity code is sent, then the transmission ends.
**Send Both:** The call code/identity code is sent both when the PTT is pressed and released.
**Note:** Since the identity code operation is independent of the call code, if there is a conflict between the identity code and the call code settings, the identity code will be sent.

## Menu Function Operation Instructions

1.Press the 【OK/MENU】 key and use the UP/DOWN keys to select the desired menu.
2.Press the 【OK/MENU】 key again to enter the selected menu.
3.Use the UP/DOWN keys or the channel knob to choose menu options, or input keypad number to enter the function quickly.
4.Press the 【OK/MENU】 key to confirm and return to the main menu.
5.Press 【EXIT】 to exit the menu and return to normal operation mode.
**Note:** Frequency step, repeater shift direction, and frequency shift can only be set in frequency mode.

## Shortwave Interface

1.After setting the PF3 side key as the shortcut to enter shortwave, press PF3 briefly to access the shortwave interface.
2.Press and hold 【 0 】 to enter the shortwave interface.
3.In the shortwave interface, briefly press 【 ✻ 】 to switch STEP/BW/LAN/BFO.




| Menu | Second Menu | Third level menu | |
|---|---|---|---|
| Modulation | FM | FMFM MEMCH | 1...15 |
| | AM | AMFM MEMCH | 1...15 |
| | | Work Band | LW Band |
| | | | MW Band |
| | | | SW Band |
| | | Frequency Step | 1K,10K,100K |
| | | LNA | AGC |
| | | | 0bd,...,-35bd |
| | LSB/USB/CW | SSBFM MEMCH | 1...15 |
| | | Frequency Step | 1K,5K,10K,100K,500K,1000K |
| | | Bandwidth | 0.5K,1.0K,1.2K,2.2K,3.0K,4.0K |
| | | LNA | AGC |
| | | | 0bd,...,-35bd |
| | | BFO | |

## Menu Function List

| No | Menu | Second Menu | Setting |
|---|---|---|---|
| 0 | SQL | 0,…,9 | Setting the squelch to off will open up the squelch entirely, Squelch is silences the receiver when there is no signal. The lower level is easier to interfere, and in the higher level, the sensitivity is not as good as lower level, so It is best to set it to middle. |
| 1 | STEP | 2.5K 5.0K 6.25K 8.33K 10.0K 12.50K 20.0K 25.0K 50.0K | In frequency mode, press the up and down keys to change the step of the frequency. Selects the amount of frequency change in VFO/frequency mode when scan or press UP/DOWN keys. |
| 2 | TXP | High | Transmit at High power. |
| | | Middle | Transmit at Middle power. |
| | | LOW | Transmit at Low power. |
| 3 | SAVE | OFF | Power save disable. Selects the ratio of sleep cycles to awake cycles(1:1,2:1,3:1,)The higher the number the longer battery lasts. The higher number increase the RX sleep cycle, but you may miss the first few syllables before the RX opens. |
| | | Normal Mode | |
| | | Super Mode | |
| | | Deep Mode | |
| 4 | VOX | OFF | Disable Voice Transmit function. |
| | | 1,2,… 9 | Activate the VOX function, level 1 is most sensitivity. When enable, it is not necessary to push the PTT button. |
| 5 | W/N | WIDE | Wideband(25Khz bandwidth). |
| | | NARROW | Narrowband(12.5Khz bandwidth). |
| 6 | ABR | ON | Backlight is always ON. |
| | | 5sec,...,3min | Backlight auto switch off time. |
| 7 | TDR | OFF | Dual frequency standby OFF. |
| | | ON | Dual frequency standby ON. |
| 8 | BEEP PROMPT | OFF | Operate beep OFF. |
| | | ON | Operate beep ON, Allows audible confirmation of a key press. |

## Menu Function List

| No | Menu | Second Menu | Setting |
|---|---|---|---|
| 9 | TOT | OFF | Time out timer for transmit. This feature provides a safety switch that limits transmission time to a programmed value. This will promote battery conservation by not allowing you to make excessively long transmissions, and in the event of a stuck PTT switch it can prevent interference to other users as well as battery depletion. |
| | | 15S…75S | |
| 10 | ZONE | ZONE 1,…, ZONE 15 | Operation to change ZONE |
| 11 | MEMCH | CH-001,…,064 | Used to create new channels(0 through 256) so that they can be accessed from MR/ Chanel mode,If the Icon“CH-”is displayed, the channel already stored. |
| 12 | DELCH | CH-001,…,064 | Delete a stored channel.If there is no CH in the front, the channel has no parameters and the operation is invalid. |
| 13 | R-CTCSS | OFF | None CTCSS |
| | | 67.0HZ,…, 254.1HZ | Receive Standard CTCSS.<br>Select standard tone or input non-standard tone via keypad. |
| 14 | R-DCS | OFF | None DCS |
| | | D023N,…,D754I | Receive Standard DCS.<br>Select standard tone or input non-standard tone via keypad. |
| 15 | T-CTCSS | OFF | None CTCSS |
| | | 67.0Hz,…, 254.1Hz | Transmit Standard CTCSS.<br>Select standard tone or input non-standard tone via keypad |
| 16 | T-DCS | OFF | None DCS |
| | | D023N,…,D754I | Transmit Standard DCS. Select standard tone or input non-standard tone via keypad. |

## Menu Function List

| No | Menu | Second Menu | Setting |
|---|---|---|---|
| 17 | VOICEPRI | OFF | Subtone encryption, if enable, others can’t hear if their frequency and CTCSS/DCS is same as yours. |
| | | Encryption 1 | |
| | | Encryption 2 | |
| | | Encryption 3 | |
| 18 | CH-NAME | Channel Name | Input channel name, press # to switch input method. |
| 19 | ROGER | OFF | Disable |
| | | BEEP | Enable, Sends an end-of-transmission tone to indicate to other stations that the transmission have ended. |
| | | TONE1200 | Send the frog sound |
| 20 | VOICE | OFF | Voice prompts OFF |
| | | ON | Voice prompt ON, Allow audible voice confirmation of a key press. |
| 21 | LANGUAGE | ENGLISH | Voice guide in English |
| | | русскнЙ | Voice guide in русскнЙ |
| 22 | BCL | OFF | Busy channel lockout OFF |
| | | ON | Disable the PTT button on a channel that is already in use. |
| 23 | SC-REV | TO | Time scanning: When the radio detects a signal, it pauses scanning and remains for about 5 seconds. Even if the signal is still present, the radio will continue scanning. |
| | | CO | Carrier scanning: When it detects a signal The Radio stop scanning and remains at the scanned frequency; it continues scan when the signal disappears. |
| | | SE | Search scanning. When the walkie talkie detects a signal, it exits the scan and remains at this frequency. |
| 24 | PF2 | SPECTRUM/ RADIO/SOS/ TXPOWER/SCAN/ SEARCH/ NOAA/PTTB | Allows you to assign the function you want as a shortcut to the radio PF2 keys. This corresponds to short press. |

## Menu Function List

| No | Menu | Second Menu | Setting |
|---|---|---|---|
| 25 | PF2 LONG PRESS | SOS/SPECTRUM/ RADIO/TXPOWER/ SCAN/SEARCH/ NOAA | Allows you to assign the function you want as a shortcut to the radio PF2 keys. This corresponds to long press. |
| 26 | PF3 | SOS/SPECTRUM/ RADIO/TXPOWER/ SCAN/SEARCH/ NOAA | Allows you to assign the function you want as a shortcut to the radio PF3 keys. This corresponds to short press. |
| 27 | OFFSET | 0 | Frequency difference between radio transmission and reception. |
| 28 | SFT-D | OFF | Enable access of repeater mode, OFF: None repeater shift. |
| | | + | In frequency mode, the TX frequency equals the RX frequency plus the frequency difference. |
| | | - | In frequency mode, the TX frequency equals the RX frequency minus the frequency difference. |
| 29 | POWER ON MSG | LOGO | Power on show LOGO |
| | | VOL TAGE | Show voltage. |
| 30 | S-CODE | 1,2,3...15 | DTMF Signal codes. |
| 31 | DTMF CODE | OFF | Disable |
| | | BOT | Transmit DTMF code when press PTT. |
| | | EOT | Transmit DTMF code when release PTT. |
| | | BOTH | Transmit DTMF code both when press PTT and release. |
| 32 | DTMFST | OFF | When transmitting (press PTT), Type DTMF code, radio will not emit the sound code. |
| | | DT-ST | When transmitting (press PTT), Type DTMF code, radio will emit the sound code. |

## Menu Function List

| No | Menu | Second Menu | Setting |
|---|---|---|---|
| 32 | DTMFST | ANI-ST | When transmittin g (press PTT), DTMF auto sending code, radio will emit the sound code. |
| | | DT+ANI | When transmitting (press PTT), DTMF auto sending code or type DTMF code via keypad, radio will emit the sound code. |
| 33 | AUTOLOCK | OFF | Keypad lock turn off. |
| | | 5S、10S、15S | Time to auto keypad lock. |
| 34 | SCAN ADD | ADD/Delete | Add or delete the channels into scan list. |
| 35 | TONE | 1000Hz,1450Hz, 1750Hz,2100Hz | To send out a burst tone, you simultaneously press PF2 key while holding down the PTT. |
| 36 | PTT-LT | 0,100,…,1000Ms | Delay time before automatic DTMF transmitting. |
| 37 | MENU EXIT TIME | 5,10,...60sec | During the menu operation, the delay time for exiting due to no operation. |
| 38 | VOX DELAY | 0.5sec,....,2.0sec | VOX delay time. |
| 39 | RP-STE | OFF | This function is used eliminate squelch tail noise when communicating through a repeater (1-10 sec). |
| | | 100ms,…,1000ms | |
| 40 | RPT-RL | OFF | Delay the tail tone of repeater(1-10s). |
| | | 100ms,…,1000ms | |
| 41 | MDF-A | NAME | A BAND show frequency. |
| | | FREQ | A BAND show channel number. |
| | | CH | A BAND show channel name. |
| 42 | MDF-B | NAME | B BAND show frequency. |
| | | FREQ | B BAND show channel number. |
| | | CH | B BAND show channel name. |
| 43 | TX-A/B | OFF | In dual standby mode, press PTT to transmit in Main Band. |
| | | A | In dual standby mode, press PTT to transmit in A Band. |
| | | B | In dual standby mode, press PTT to transmit in B Band. |

## Menu Function List

| No | Menu | Second Menu | Setting |
|---|---|---|---|
| 44 | STE | OFF | Squelch tail noise eliminate set OFF. |
| | | ON | This function is used eliminate squelch tail noise between our handhelds that are communicating directly (no via repeater). |
| 45 | AL-MOD | ON SITE | Field alarm |
| | | SEND SOUND | Send alarm sound |
| | | SEND CODE | Send alarm tone |
| 46 | SCRAMBLE | OFF/ON | Voice scrambler function. Provide two scrambler frequency, prevent parties on other radios at same frequency from hearing and understand your voice |
| 47 | NOISE REDUCTION | OFF/ON | Option funciton, Turn on Noise Reduction/Cancelltion. |
| | | | RT-900 bluetooth version only. |
| 48 | BLUETOOTH | OFF/ON | Option function, Turn on bluetooth connect with mobile app, RT-900 bluetooth version only. |
| 49 | RESET | VFO | Menu initialization. |
| | | ALL | |
| 50 | RX Modulation | FM | Switch between AM modulation or FM modulation. |
| | | AM | |
| 51 | VERSION | Firmware | Show firmware version number |
| | | Hardware | Show Hardware version number |

## Charging Instructions

1.Dock Charging (Optional): Insert the battery pack or the radio with the battery pack into the charging dock. Ensure proper contact with the charging terminals of the dock.
2.Type-C Charging: Connect the provided charging cable to the power adapter and plug the power adapter into an AC power outlet. Insert the charging cable into the Type-C interface of the main unit's battery.
3.When the device is charging, the red indicator light indicates charging in progress. The green indicator light indicates charging is complete.

## Cleaning and Maintenance

To ensure optimal performance and extend the lifespan of this product, please follow the guidelines below for daily maintenance and cleaning.

**Daily Maintenance:**

1.Do not pierce or scratch the product with hard objects.
2.Do not store the product in environments containing chemical corrosive substances.
3.Do not carry or use the product by pulling the earphone cable.
4.When not using the earphone jack, cover the interface with the protective cap.

**Cleaning Procedure:**

Before cleaning, please power off the device and remove the battery:

1.Regularly use a dry, clean, lint-free cloth or a soft brush to remove dust from the product surface and charging terminals.
2.If the buttons or casing become dirty, use a neutral detergent and a non-woven cloth for cleaning. Do not use detergents, alcohol, sprays, or petroleum-based chemicals as they may damage the surface casing.
3.After cleaning, ensure the product is completely dry before use.

## Warranty Terms

The warranty period for this product starts from the date of sale (based on the date on the sales invoice). The main unit is covered for 12 months, and the battery and charging accessories are covered for 6 months. The following cases will require paid repair services during the warranty period:

1.Failure to present this warranty card and the purchase invoice.

2.This card shows signs of alteration or does not match the product.

3.Defects and damages caused by using this product under non-standard conditions.

4.Defects and damages caused by misuse, accidents, water ingress, or negligence.

5.Defects and damages resulting from improper testing, operation, repair, installation, modification, or adjustment.

6.Defects and damages caused by unauthorized repairs or disassembly.

7.Defects and damages caused by force majeure.

8.Normal wear and tear from regular use.

## Product Warranty Card

| | |
|---|---|
| Sales Information | Dealer (Valid with Stamp): |
| | Contact Number: |
| | Address: |
| Product Information | Product Model: |
| | Serial Number: |
| | Purchase Date: |
| User Information | User Name: |
| | Contact Number: |
| | Address: |

This warranty card serves as an important proof for the end user to enjoy warranty services. It must be stamped and filled out completely by an authorized dealer to be valid. Please keep it safe.